



Attorney's Docket No.: 042390P10625

Patent

#8/Affidavit  
10/27/03

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of: )  
Jack Hwang, et al. )  
Application No.: 09/887,910 ) Examiner: Igwe U. Anya  
Filed: June 22, 2001 ) Art Unit: 2825  
For: A METHOD OF MAKING A )  
SEMICONDUCTOR TRANSISTOR )  
BY IMPLANTING IONS INTO A )  
GATE DIELECTRIC LAYER THEREOF )

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

AFFIDAVIT

Dear Sir:

I, Jack Hwang, having personal knowledge of the facts set forth herein,  
hereby declare as follows:

1. I am a co-inventor for the above-identified patent application entitled  
“A METHOD OF MAKING A SEMICONDUCTOR TRANSISTOR BY  
IMPLANTING IONS INTO A GATE DIELECTRIC LAYER THEREOF.”
2. The Examiner has rejected claims 1-12, 14, 15 and 20-22 under 35 U.S.C.  
§ 103(a) as being unpatentable over U.S. Patent No. 6,335,536 issued to Goeckner et al. (“Goeckner”) in view of U.S. Patent No. 6,087,229 issued to Aronowitz et al. (“Aronowitz”).

The Examiner has rejected claims 13, and 16-19 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,335,536 issued to Goeckner et al. ("Goeckner") in view of U.S. Patent No. 6,087,229 issued to Aronowitz et al. ("Aronowitz"), and further in view of U.S. Patent No. 6,432,780 issued to Chen.

3. The Goeckner patent appears to have been assigned to Varian Semiconductor Associates, hereinafter "Varian." The Goeckner patent discloses a tool that is provided by Varian, hereinafter "the Varian tool."

4. Varian is an ion implantation company, and the Varian tool is a gate electrode plasma tool which is an alternative to an ion plantation tool used for implanting conductivity-altering impurities into semiconductor wafers. The Varian tool is typically used to implant ions to form source and drain regions of transistors.

5. We use the Varian tool, which we have modified to provide one order of magnitude less power. The application is also different in that our tool is used for implanting ions into a gate dielectric layer of a transistor, as claimed.

6. The Varian field of ion implantation is worlds apart from the present application of gate dielectric formation. The people of Varian are skilled in the field of ion implantation, but are generally much less skilled in the field of gate dielectric formation. I have a background in ion implantation and was then transferred within my company to a group that specializes in the formation of gate dielectric layers. I believe that the only reason why the Varian tool found application in the formation of gate dielectric layers is because I was transferred,

and was able to apply the knowledge gained in this prior ion implantation field to the formation of gate dielectric layers.

7. I approached Varian and told Varian about the possible new application for the Varian tool by modifying the tool. The people of Varian were quite surprised to learn that the energy levels of their machine can be reduced by one order of magnitude and still find a new application.

8. I believe that a person, such as employed by Varian, having skill in the art and having knowledge of the prior art, would not have been able to modify the prior art to render the present invention. As such, I believe that the invention as claimed is patentable over the Varian tool.

I hereby declare that all statements made herein are of my own personal knowledge and are true, and that all statements made on information and belief are believed to be true; and that these statements were made with knowledge that willful, false statements and the like may jeopardize the validity of the patent application, or any patent resulting therefrom.

Respectfully submitted,

Dated: October 16, 2003

  
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Jack Hwang